

be filed away. Copies of all reports made and proceedings in road and ditch matters as well as bridges, etc., should be kept and properly filed away for future reference.

There should be adopted in the near future a uniform system of plans and profiles to make same standard as to size and general make-up. We should also adopt a book of conventional signs for use on drawings. This would make it easier for contractors and others to interpret drawings. Counties should have a uniform datum for levels. Each road or project now has a separate datum line. Each county should have in the surveyor's office a map and record showing the details of each road and bridge in the county. The map should show data such as length, width and kind of road and name of stream, span of bridge, area of opening, whether concrete, wood or steel bridge, etc. The importance of such a record is quite evident.

Road superintendents on new work should be considered part of the county surveyor's organization, and should report to the surveyor each day by making out a daily report devised by the surveyor. The county surveyor's men should be quiet and well mannered on the work and not make wild or unwarranted statements to the people.

Work should be arranged by agreement with the court or commissioners so that the bulk of designing or preliminary work can be completed in the winter time in order that more attention can be given to construction in summer. Thus the surveyor's work is more uniformly distributed throughout the year.

THE COUNTY SURVEYOR'S ORGANIZATION FOR FIELD AND OFFICE WORK

Discussion by W. E. Morthland,
Porter County Surveyor.

The subject assigned to me is a difficult one to discuss owing to the fact that each of us is confronted by different circumstances. As regards pay, some of us are well provided for with yearly salaries while others work by the day when there happens to be county work to be done. Some of us have to work up private practice with small towns and among individuals in order to keep any organization at all. Restrictions by our boards of county commissioners and the State Board of Accounts greatly influence our organizations.

Considering these many differences of working conditions I will merely discuss my organization as I am able to hold it under the conditions in Porter County.

I probably have an average amount of county work. We generally have from three to twenty miles of new road work. Ditches, bridges and culverts, all require varying amounts of time. County work would probably keep a small organization together provided it were steady, but it is not. Things that should be done, such as keeping up quarter-section plats, making legal surveys and preserving landmarks during construction, I find difficult to do. This is sometimes due to a lack of interest on the part of the county commissioners, but more often because of a failure to understand the functions of a surveyor. As a result, my office seeks private practice.

Our district is fast developing into an industrial center which provides much work for a surveyor. My private practice includes work as engineer for some of our small towns, surveyor for new layout and subdivisions and some general engineering. This has exceeded my county work this past year.

By combining private with county work I am able to keep a fairly respectable organization including two parties full time. By breaking in a transitman on each, we occasionally have a third field party. Either my deputy or I usually manage to keep in touch with construction and keep the county surveyor's office open to the public. By keeping on hand some map work for spare time, I have been able to keep a draftsman.

I regret that the inspectors on county construction do not work from my office.

One of my greatest difficulties is breaking our rodmen into transitmen and our transitmen into chiefs and that is because we have no sliding scale of pay for our help on county work. I am not clear yet as to whether it is the view of our commissioners or our state examiners, but it seems to stick through tradition or something, that one field man is as good as another and that until a man can take complete charge of a party and be in every way responsible for its actions, he is not entitled to any more pay than the other rodmen. From rodmen to complete responsibility is a pretty big step to take and most of them get discouraged before they make the grade.

As I mentioned before, my office carries no salary. Possibly it should not but I am inclined to believe that if certain desirable things should be required of the office and it were required that the office be held by an engineer the counties would get their money's worth many times over by taking their county surveyors from private work as a means of livelihood and use their full time at adequate pay.